

# Claims

[c1] What is claimed is:

1.A method for discriminating optical media type for an optical drive to discriminate the type of optical media rapidly, the optical drive comprising a reading unit capable of converging a laser beam to a light spot, the method comprising:

- (a)positioning a reading unit of the optical drive at a first position;
- (b)moving the reading unit to a second position so that the light spot passes over a data layer of the optical media;
- (c)continuing recording the reflection of the laser beam to obtain a first time when the reflection is larger than a predetermined reflection;
- (d)moving the reading unit back to the first position so that the light spot passes over the data layer of the optical media;
- (e)continuing recording the reflection of the laser beam to obtain a second time when the reflection is larger than a predetermined reflection; and
- (f)calculating a time difference between the second time and the first time and comparing the time difference

with at least one predetermined time in order to discriminate the type of the optical media.

- [c2] 2.The method of claim 1 wherein the optical media is an optical disk, and the optical drive is an optical disk drive.
- [c3] 3.The method of claim 2 wherein the reading unit is a pickup head.
- [c4] 4.The method of claim 3 wherein the first position is a mechanical upper limit, the second position is a mechanical lower limit, and the moving direction in step (b) is away from the disk.
- [c5] 5.The method of claim 3 wherein the first position is a mechanical lower limit, the second position is a mechanical upper limit, and the moving direction in the step (b) is toward to the disk.
- [c6] 6.The method of claim 2 wherein the disk type can be distinguished by comparing the time difference between the second time and the first time with a predetermined time.
- [c7] 7.A method for discriminating optical media type used in an optical drive, the optical drive comprising a pickup head movable between a first position and a second position, the method comprising:

(a)moving the pickup head from the first position to the second position then back to the first position, and calculating the total time the pickup head spends between two reflection peaks; and

(b)comparing the total time with a predetermined time in order to discriminate the type of the optical media.

[c8] 8.The method of claim 7 wherein the two reflection peaks occur when a laser beam generated by the pickup head twice passes over a data layer of the optical media.

[c9] 9.A method for discriminating optical media used in an optical drive, the optical drive comprising a pickup head movable between a first position and a second position, the method comprising:

(a)moving the pickup head from the first position to the second position then back to the first position, and calculating the total distance the pickup head moves between two reflection peaks; and

(b)comparing the total distance with a predetermined distance in order to discriminate the type of the optical media.

[c10] 10.The method of claim 9 wherein the two reflection peaks occur when a laser beam generated by the pickup head twice passes over a data layer of the optical media.